

# ***Military Adaptation to Climate Change***

---



**Ms. Ninette Sadusky**

**International Policy Advisor**

**OUSD(Acquisition, Technology & Logistics)/DUSD(Installations & Environment)  
Office of the Secretary of Defense  
United States of America**

**Environment, Energy Security and Sustainability Symposium (May 9-12, 2011)**

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>MAY 2011</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2011 to 00-00-2011</b>	
4. TITLE AND SUBTITLE <b>Military Adaptation to Climate Change</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Office of the Deputy Under Secretary of Defense (Installations &amp; Environment), 3400 Defense Pentagon, Room 3B856A, Washington, DC, 20301-3400</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>Presented at the NDIA Environment, Energy Security &amp; Sustainability (E2S2) Symposium &amp; Exhibition held 9-12 May 2011 in New Orleans, LA.</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>15</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



# Secretary Robert Gates

---

“...The melting of the polar ice cap in the Arctic plus the frequency and intensity of weather events in this hemisphere, with the corresponding need for military humanitarian assistance missions, calls for a greater attention to the security implications of climate change. ...”



Remarks at the Halifax International Security Forum,  
Halifax, Nova Scotia Nov 2009



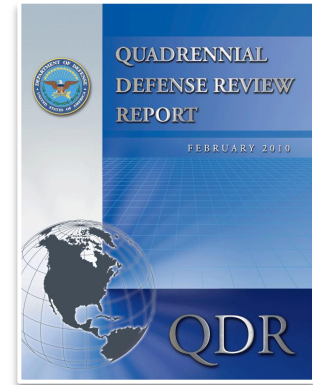
# 2010 Quadrennial Defense Review

---

**❑ For the first time, DoD explicitly evaluated climate change as part of the QDR.**

**❑ Climate change influence DoD's:**

- Operating environment
- Missions



**❑ DoD will need to adapt to the impacts of climate change**

- Retain Mission Capability Resilience
- Address Changing Missions



# US Climate Change Trends & Challenges

## Climate Drivers at US installations

- ☐ Arid areas of the Southwest will become hotter and drier
- ☐ Increased temperatures and weather extremes in the Southeast
- ☐ Rising temperatures will impact cold-region installations
- ☐ Coastal areas will be impacted by sea level rise and storm surge





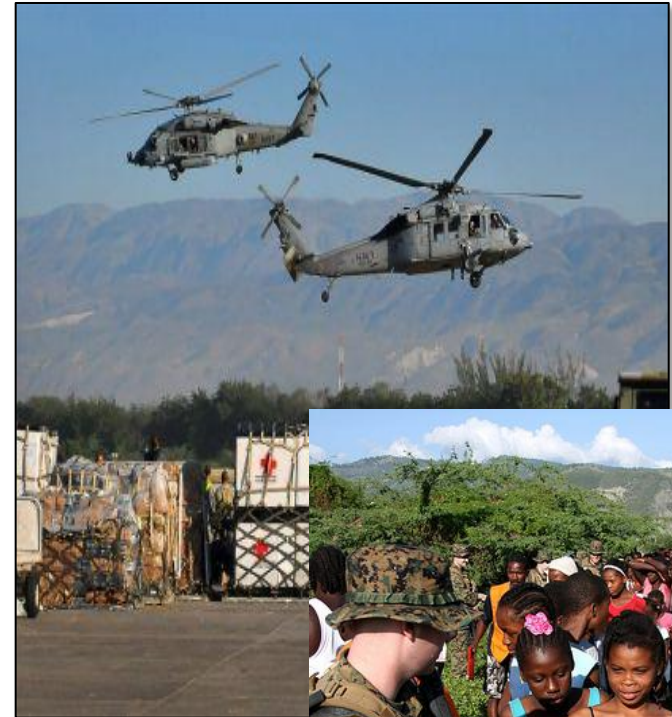
# Climate Change Impacts on DoD

## Vulnerabilities

- ☐ Built infrastructure
- ☐ Stressed ecosystems
- ☐ Training and testing lands

## Military mission capability

- ☐ ?????
- ☐ ?????







# Changing Mission

---

## ☐ **Changing (expanding) requirements**

- Humanitarian Assistance/Disaster Relief
- Peace Keeping
- Other

## ☐ **Changing operational environment**

- Actual change to environment
- Equipment limitations
- Force health protection
- Logistics challenges



# Resilience

---

## **Retain Military Mission Capability**

### **❑ Presidential Direction**

- **Improve federal government efficiency through development of a green economy and decreased dependence on fossil fuels.**
- **“DoD vision is to maintain the ability to operate into the future without decline – either in our mission or in the natural and manufactured systems that support it”**

### **❑ Key Areas to Improve Mission and Reduce Overall Cost**

- **Energy & Reliance on Fossil Fuels**
- **Chemicals of Environmental Concern**
- **Water Resources Management**
- **Maintaining Readiness in the Face of Climate Change**





# Objectives & Goals



## OBJECTIVE 1

### *Continued Availability of Critical Resources*

- Goal 1 – Use of Fossil Fuels Reduced
- Goal 2 – Water Resources Management Improved



## OBJECTIVE 2

### *DoD is a U.S. Government Leader in Reducing GHGs*

- Goal 3 – Scope 1 & Scope 2 GHG Emissions Reduced 34% by 2020, relative to FY08
- Goal 4 – Scope 3 GHGs reduced 13.5% by 2020, relative to FY08



## OBJECTIVE 3

### *Minimize Waste and Pollution*

- Goal 5 – Solid Waste Minimized and Optimally Managed
- Goal 6 – Chemicals of Environmental Concern Minimized



## OBJECTIVE 4

### *Management and Practices Built on Sustainability & Community*

- Goal 7 – Sustainability Practices Become the Norm
- Goal 8 – Sustainability Built into DoD Management Systems



# OBJECTIVE 1:

## Continued Availability of Critical Resources

- *Energy Intensity by DoD Facilities Reduced by 30% of FY 2003 Levels by FY 2015 and 37.5% by FY 2020*
- *18.3% of Energy Consumed by DoD Facilities is Produced or Procured from Renewable Sources by 2020*
- *Use of Petroleum Products by Vehicle Fleets Reduced 30% by 2020 Relative to 2005*

**Goal 1 - Use of Fossil Fuels Reduced**



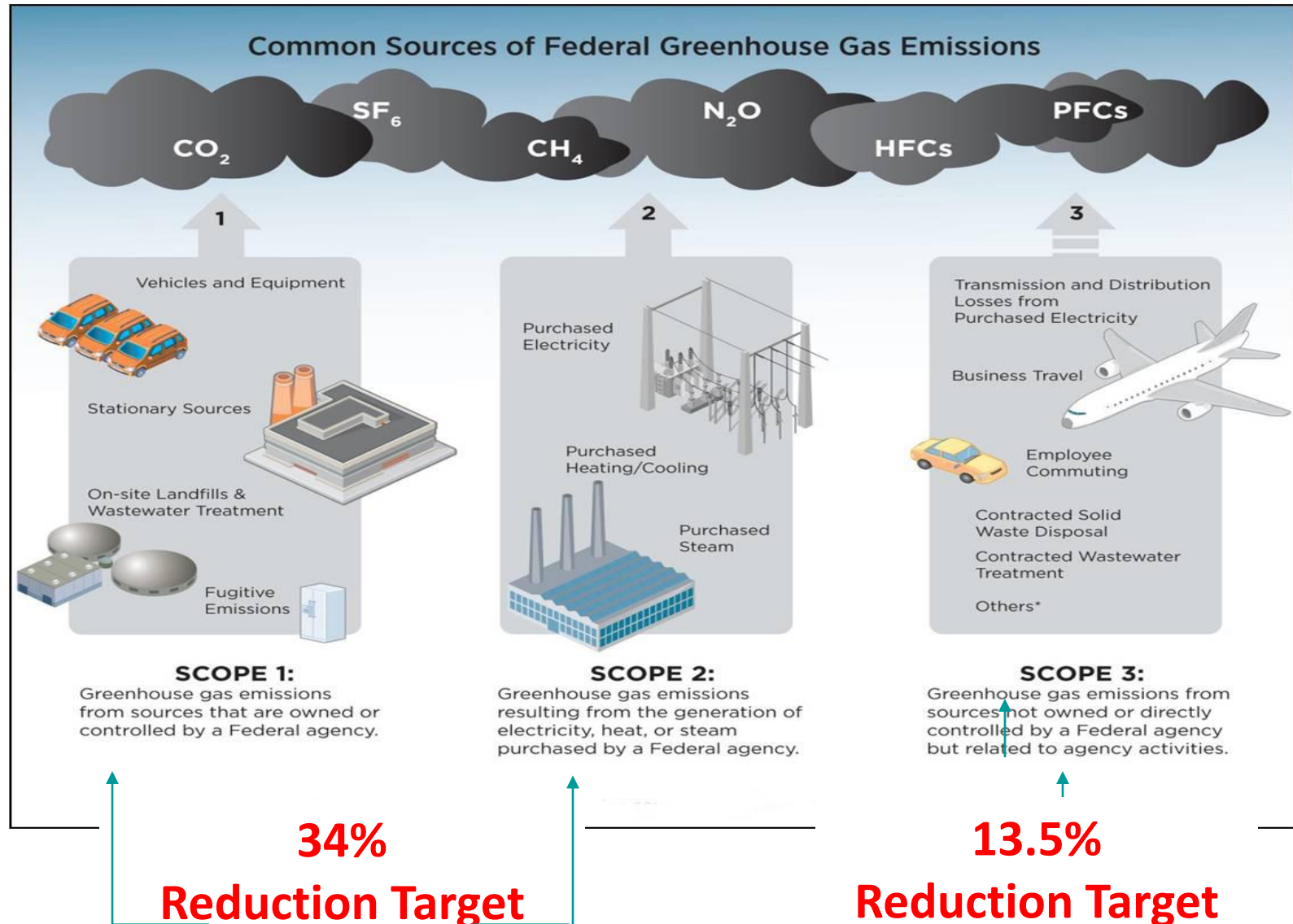
- *Potable Water Consumption Intensity by Facilities Reduced by 26% of FY 2007 Levels by FY 2020 (contributes to energy goals)*
- *DoD Industrial and Irrigation Water Consumption Reduced by 20% of FY 2010 Levels by FY 2020 (contributes to energy goals)*
- *All DoD Development and Redevelopment Projects of 5,000 Square Feet or Greater Maintain Pre-Development Hydrology to the Maximum Extent Technically Feasible*

**Goal 2 - Water Resources Management Improved**





# OBJECTIVE 2: Reducing Green House Gases





## OBJECTIVE 3: Minimize Waste and Pollution

- **All DoD Organizations Implementing Policies by FY 2014 to Reduce the Use of Printing Paper**
- **50% of Non-Hazardous Solid Waste Diverted from the Waste Stream by 2015 and Thereafter Through 2020**
- **60% of Construction and Demolition Debris Diverted from the Waste Stream by 2015, and Thereafter Through 2020**
- **Landfills Recovering Landfill Gas for Use by DoD: Two by FY 2012 and Ten by 2020 (contributes to energy goals)**

**Goal 5 – Solid Waste Minimized and Optimally Managed**



- **15% Reduction of On-Site Releases and Off-Site Transfers of Toxic Chemicals by 2020, Relative to 2007 (can contribute to energy goals)**
- **100% of DoD Excess or Surplus Electronic Products Disposed of in Environmentally Sound Manner**
- **100% of DoD Personnel and Contractors that Apply Pesticides Properly Certified Through 2020**

**Goal 6 – Chemicals of Environmental Concern Minimized**





## OBJECTIVE 4: Management and Practices

- **95% of Procurement Conducted Sustainably** (*can contribute to energy goals*)
- **15% of Existing DoD Buildings Conform to the Guiding Principles on High Performance and Sustainable Buildings By FY 2015, Holding Through 2020** (*contributes to energy goals*)

**Goal 7 – Sustainability Practices Become the Norm**



- **All Environmental Management Systems Effectively Implemented and Maintained** (*should assist energy goals*)
- **The Sustainability of Transportation and Energy Choices in Surrounding Areas Optimized by Coordinating with Related Regional and Local Planning** (*contributes to DoD and national energy goals*)
- **All DoD Installations Have Integrated Pest Management Plans Prepared, Reviewed, and Updated Annually by Pest Management Professionals**

**Goal 8 – Sustainability Built into DoD Management Systems**







# Adaptation

---

- ☐ **Assess vulnerabilities**
- ☐ **Develop strategies to address vulnerabilities**
  - Invest in research and development to fill the gaps
- ☐ **Integrate into planning and operations**



# Partnering for Success

---

- ❑ **No U.S. government “lead” on climate change, but DoD can demonstrate leadership**
  - **Reduce emissions in support of national mitigation goals**
  - **Share data and solutions to assist in adaptation efforts**
  - **Adjust mission capability**
  
- ❑ **Partner with other U.S. government agencies such as:**
  - **Department of Energy**
  - **Department of Homeland Security**
  - **State Department**
  - **US Agency for International Development**
  
- ❑ **Partner with Other Militaries**



# ***Military Adaptation to Climate Change***

---



**Ms. Ninette Sadusky**

**International Policy Advisor**

**OUSD(Acquisition, Technology & Logistics)/DUSD(Installations & Environment)  
Office of the Secretary of Defense  
United States of America**

**Environment, Energy Security and Sustainability Symposium (May 9-12, 2011)**